Further down the high-p_T road

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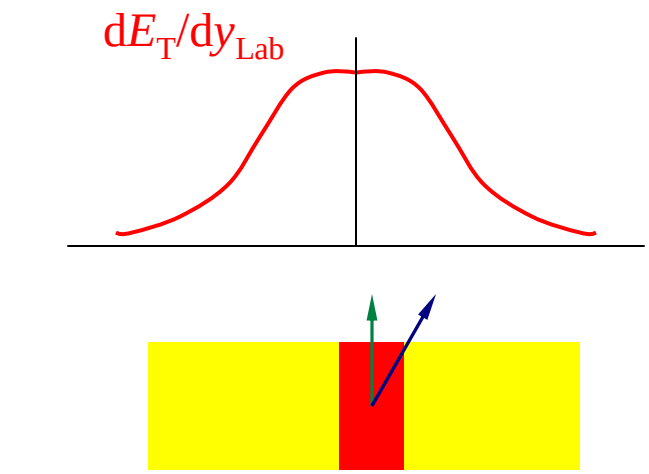
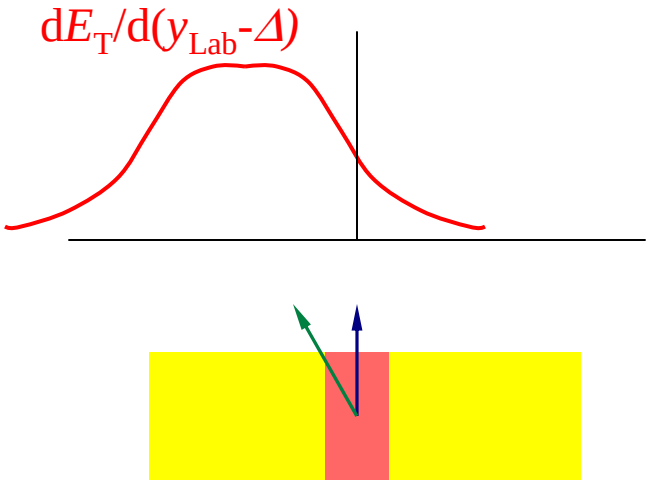
RHIC II High-p_T April 30

Away from mid-rapidity





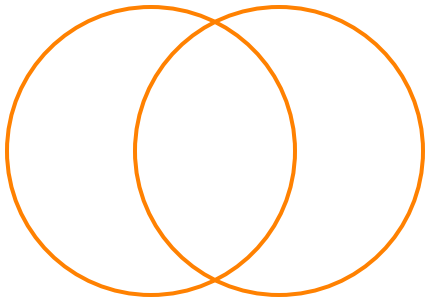
General rule: In Bjorken picture, rest frame of medium seen by a jet is also frame where jet is purely transverse. Away from mid-rapidity $dE_T/d\eta$ is lower -- also energy density?

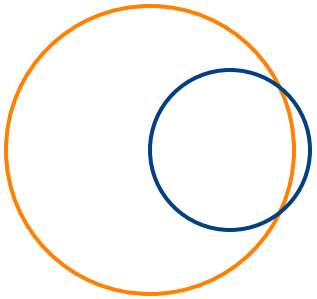
Simplest way to dial down energy density without changing geometry

Can tomography reveal history of energy density in this region? Does quenching follow $dE_T/d\eta$? Does this constrain model of initial thermalization?

If medium accelerates longitudinally, will it have a visible effect on jet modification?

Breaking excessive symmetry



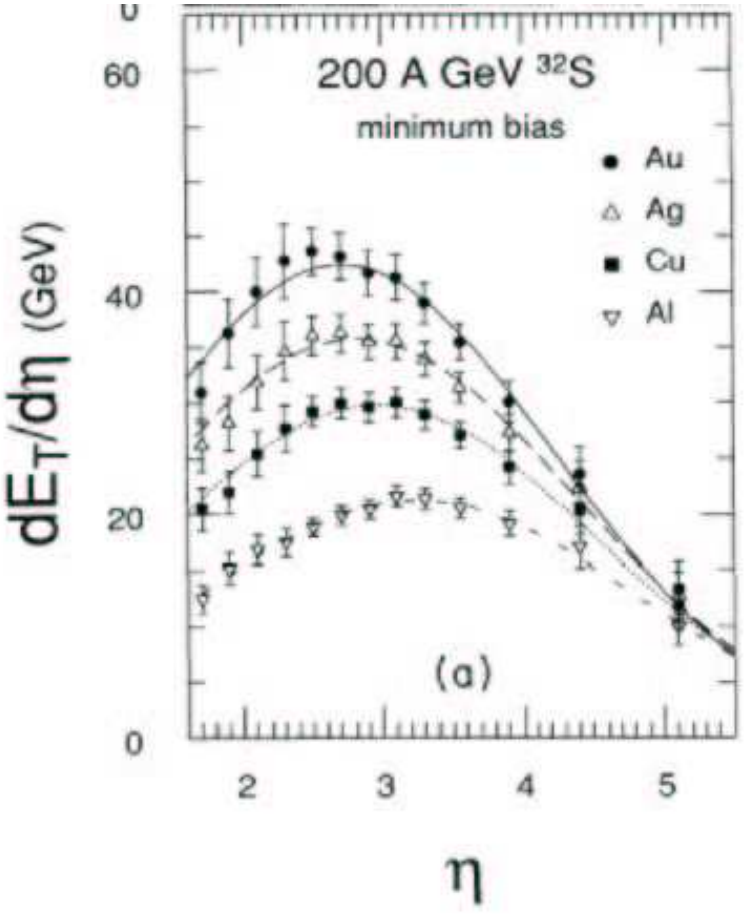


Symmetric A+A collisions enforce "excessive" symmetry; no v_1 or v_3 at mid-rapidity, for example.

Running asymmetric A+B ion collisions lets one examine an overlap region with less symmetry, and so more variations in density x path length.

How do v_1, v_2 and v_3 of high-p_T jet particles compare to v_1, v_2 and v_3 of low-p_T flow? More constraints on quenching models.

Naturally, try both together

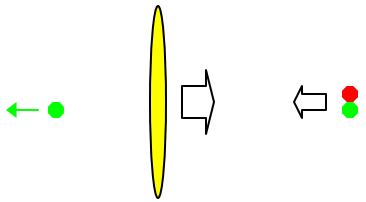


SPS Data (WA80)

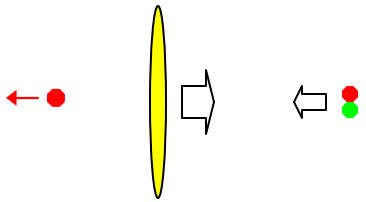
Ideal exercise for tomography is to look at jet-medium interactions when medium has minimal symmetry, both in transverse plane and forward-backward.

Want to bring the whole family along away from mid-rapidity: singles, pairs, PID, heavy flavor, photon-tagged, etc. (But, how much do you *really* need?)

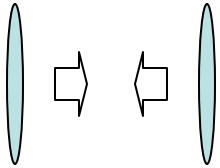
Charge transport



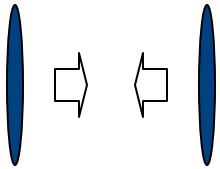
p+Au



n+Au



$^{96}_{40}Zr+^{96}_{40}Zr$



$^{96}_{44}Ru+^{96}_{44}Ru$

Can electrical charge trace the transport of quarks vs gluons up to high p_T, both for jet fragments and otherwise? Change charge of incoming quarks and look very carefully at where change in net charge shows up.

High-precision $(h^+/h^-)_{p+Au}$ / $(h^+/h^-)_{n+Au}$ vs p_T we can do in existing data

Interesting down to very low p_T; is "bulk" purely gluonic? (not this WG)

Future exotic nuclei combinations?

Baryon and isospin transport…

Round up the usual suspects….

W and Z production at RHIC? (A PWS perennial)

- Nuclear effects at high x and historically high Q^2
- W+/W- sensitive to u/d asymmetry at high x

Angular correlations: 2-, 3-, 4-particle? How much is enough?